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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/024,187	12/21/2001	Koji Wariishi	Q67822	4422

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2100 PENNSYLVANIA AVENUE, N.W.
WASHINGTON, DC 20037

EXAMINER

RUTHKOSKY, MARK

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 07/17/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/024,187

Applicant(s)

WARIISHI, KOJI

Examiner

Mark Ruthkosky

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

The drawings filed on 12/21/2001 have been approved.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7 are rejected under 35 U.S.C. 102(e) as being anticipated by, or in the alternative, under 35 U.S.C. 103(a) as obvious over McEwen et al. (US 2002/0110739.)

The instant claims are to an electrolyte composition comprising a molten salt represented by the claimed formulae including pyridinium and imidazolium cations, a polymer prepared by a reaction between an electrophile having at least two unsaturated bonds polarized by an electron withdrawing group and a nucleophile having a plurality of nucleophilic groups, and a metal salt containing a Group IA or Group IIA metal ion.

McEwen et al. (US 2002/0110739) teaches an electrolyte composition comprising a molten salt represented by the claimed formulae including pyridinium and imidazolium cations, a polymer and a metal salt containing a Group IA or Group IIA metal ion. Lithium salts combined with an organic cation salt including pyridinium and imidazolium cation salts and a polymer may be included in the mixture. Non-aqueous secondary batteries are further noted, (claims 10-37, the examples and table 2.) Thus, the claims are anticipated.

It is noted that the polymer is a product prepared by a process. MPEP 2113 states, "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." The prior art does not teach the process of making the polymer material. If the claims are not considered to be anticipated, the claims are obvious over the prior art as noted in MPEP 2113.

Claim Rejections - 35 USC § 103

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi et al (US 6,190,805), and further in view of Thrash et al. (US 4,643,958.)

Takeuchi et al (US 6,190,805) teaches a polymer electrolyte composition including nitrogen or phosphorous cation containing salt such as pyridinium and imidazolium cations, metal salts containing a Group IA or Group IIA metal ion and polymer materials (see col. 25, line 55 to see col. 26, line 7, and examples 1-50.) Lithium salts are noted. Non-aqueous secondary batteries are discussed throughout the references including the examples, (claims 10-37, the examples and table 2.) Ammonium salts are noted to have high solubility and dissociation constants in the polymer electrolyte. Takeuchi et al (US 6,190,805) does not teach a mixture of electrolyte salts. Thrash et al. (US 4,643,958) teaches an electrolyte, which combines lithium salts with organic salts including phosphonium, pyridinium and imidazolium cations (col. 6; claims 11-18.) It would be obvious to one of ordinary skill in the art at the time the invention was made to combine the lithium salts and organic salts including pyridinium and imidazolium cations taught in Takeuchi et al (US 6,190,805) as Thrash et al. (US 4,643,958) teaches that the combination of salts will provide an adequate conductivity for the cells while being inert to the cell components. Thrash et al. (US 4,643,958) notes that the combination of salts is preferred (see col. 6, lines 33-end.) Based on the teachings of Thrash et al. (US 4,643,958), one of ordinary skill in the art would combine various salts including lithium salts and ammonium salts in order to allow for efficient operation of the battery. The artisan would have found the claimed invention to be obvious in light of the teachings of the references.

It is noted that the polymer is a product prepared by a process. MPEP 2113 states, "Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." The prior art does not teach the process of making the polymer material.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited art does not read upon the instant claims, however, the references include general teachings and relevant features as to the state of the art at the time of the invention.

For example, Sun (US 5,609,974) teaches a solid polymer electrolyte with lithium salt electrolytes wherein reacting various monomers forms the polymer electrolyte.

Examiner Correspondence

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1193. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Ruthkosky whose telephone number is 703-305-0587. The examiner can normally be reached on FLEX schedule (generally, Monday-Thursday from 9:00-6:00.) If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at 703-308-2383.

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The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Mark Ruthkosky

Patent Examiner

Art Unit 1745

Mark Ruthkosky
7/12/03